

ACC NR: AT6020410

also found to increase by an order of magnitude at the exit from the helical magnetic field of a curved toroidal section. Data for the various cases showing both space and time dependence of the various quantities measured are graphed. Orig. art. has: 9 figures.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 003/ OTH REF: 001

Card 2/2 *lth*

AUTHOR: Zykov, V. I., Zhdanov, S. I. 76-32-3-23/43

TITLE: The Reduction of the BrO_3^- Anion on the Dropping-Mercury Electrode (Vosstanovleniye aniona BrO_3^- na kapel'nom rtutnom elektrode).
I. The Polarography of BrO_3^- in the Presence of Monovalent Cations at Various pH Values (I. Polyarografiya BrO_3^- v prisutstvii odnozaryadnykh kationov pri razlichnykh pH)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 3, pp. 644-653 (USSR)

ABSTRACT: In the investigations performed by Orleman and Kolthoff (reference 2), the observations made were not explained, whereas the explanation of the distorted polarization curves by the expression "water waves" is to be considered wrong. M. G. Kozlovskiy et al (reference 4) calculated n for the reduction of BrO_3^- in the presence of bivalent cations, according to the formula by Il'kovich and obtained the result that n varies between 3 and 6. From the experimental data of the present paper it follows that the

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The Reduction of the BrO_3^- Anion on the Dropping-Mercury Electrode. 76-32-3-23/43

I. The Polarography of BrO_3^- in the Presence of Monovalent Cations at Various pH Values

authors polarographed with visual reading. A capillary with a circular passage was used and the current intensity was measured with a galvanometer of a maximum sensitivity of $3.5 \cdot 10^{-8}$. The investigations were performed at 25°C in neutral, alkaline and acid media. From the given investigation results follows that in neutral and alkaline solutions $n = 6$, whereas $\varphi^{1/2}$ in the order $\text{Li}^+ \rightarrow \text{Cs}^+$ becomes more positive, at the same concentration of the indifferent electrolyte. An addition of gelatine to the solution independent of pH brings about a change of $\varphi^{1/2}$ to negative values. The reduction velocity of BrO_3^- in neutral, acid and alkaline solutions is independent of pH. According to the obtained results for $\varphi^{1/2} \text{BrO}_3^-$ does not depend on the concentration of BrO_3^- indicating a first order reaction. Reference is made to the more exact significance of Ψ , according to the explanation by A. N. Frumkin (references 7,8), where a derivation according

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The Reduction of the BrO_3^- Anion on the Dropping-Mercury Electrode. 76-32-3-23/43

I. The Polarography of BrO_3^- in the Presence of Monovalent Cations at Various pH Values

to the theory of the binary electric layer of diffusion is performed. An increase in the reduction velocity in the series $\text{Li}^+ \rightarrow \text{Cs}^+$ was observed in $\text{S}_2\text{O}_8^{2-}$ by N. V.

Nikolayeva and B. B. Damaskin (reference 10) and reported on the occasion of the electrochemical conference in May 1956 in Vil'nyys. In a further test series, it was determined that when $\text{pH} \sim 4$, further acidification changes the reaction mechanism and thus other polarization curves occur, which was also observed on a further addition of BrO_3^- solution. From this, it is concluded that the kinetic equation of reaction must contain a value which expresses the connection of the reaction velocity with the concentration of H^+ ions. It is assumed that in acid solutions the nondissociated HBrO_3 molecules decompose. However, another interpretation according to Rylich (ref 1) is also cited. Finally the authors thank A. N. Frumkin, Member of the Academy of Sciences, USSR.

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The Reduction of the BrO_3^- Anion on the Dropping-Mercury Electrode. 76-32-3-23/43

I. The Polarography of BrO_3^- in the Presence of Monovalent Cations at Various pH Values

There are 7 figures, 2 tables, and 12 references, 6 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva
(AS USSR Institute of Physical Chemistry, Moscow)

SUBMITTED: November 28, 1956

Card 4/4

ZYKOV, V.I. (Moscow)

Effect of certain surface active organic cations on the reduction kinetics of the I_0^- ion on a dropping mercury electrode. Zhur. fiz. khim. 35 no.2:355-362 F '61. (MIRA 16:7)

(Iodates) (Reduction, Electrolytic)
(Surface active agents)

L 11631-66 EWT(d)/EP4/EWT(1)/EWP(f)/EWP(v)/T-2/EWP(k)/EWP(h)/EWP(1) WW
ACC NR: AT6001023 SOURCE CODE: UH/2563/65/000/247/0064/0074

AUTHOR: Galerkin, Yu. B.; Zykov, V. I.; Selezhnev, K. P. 71
ORG: Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut) B+1
TITLE: Investigation of interstage passages in a centrifugal compressor section
SOURCE: Leningrad, Politekhnicheskiy institut. Trudy, no. 247, 1965. Turbomashiny
(Turbomachines), 64-74

TOPIC TAGS: compressor, centrifugal compressor, compressor design, compressor stage, model test, test stand, air flow, flow field/SSP-1 test stand, ETsK-3 test stand

ABSTRACT: The effects of the meridional profile of interstage passages on the performance of a centrifugal compressor section were investigated. Seven variations of the initial profile in which only the length L was changed ($L = 204-106$ mm) with other parameters held constant ($b_0 = 35.6$, $r_1 = 17$, $R_1 = 55$, $r_2 = 10$, $R_2 = 36$ mm) and two types with slightly different geometry were tested. Full scale stage characteristics were obtained on test stand ETsK-3 (at 156, 202, and 253 m/sec). Wooden models (five times actual size) were used to study the flow, using electric analog techniques (EGDA) and static blower tests on test stand SSP-1. The equipment and methods used were described previously by Yu. B. Galerkin, and F. S. Rekstin (Eksperimental'naya ustanova dla issledovaniya trentrobehnykh stupeney).

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ACC NR: AT6001023

Nauchno-tehnicheskiy informatsionnyy byul. LPI, Energomashinostroyeniye, 1961, No. 5, 25-32). It was found that both the electrical analog and the static blower tests were useful in studying the flow fields. A large amount of data was obtained on the effects of l_0/b_0 ratios and of r_1 and r_2 on the flow field, but only sample data are presented. The actual full scale tests of the compressor stage gave only the overall effects, so that the model tests are useful in determining the relative importance of individual changes. It is concluded that the axial length could be decreased by 20% without lowering performance characteristics. Further work is in progress to develop a short profile which will have minimum flow separation. Orig. art. has: 5 figures.

SUB CODE: 13, 20 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 001

Card 2/2

ZYKOV, V.I.

New possibility for lowering etching brittleness. Zhur. prikl. khim. 34 no.5:1031-1040 My '61. (MIRA 16:8)

(Steel—Brittleness)

ZHDANOV, S.I.; ZYKOV, V.I.

Microcoulometric determination of the number of electrons involved
in electrochemical reactions. Trudy Inst. fiz. khim. no.6:29-38
'57. (MIEA 11:10)

(Electrochemistry) (Electrons)

SHATILOV, A.F.; ZYKOV, V.I.

Organizing the operation of the main conveyor at the Gor'kiy
Automobile Plant. Trudy Stud. nauch. ob-va LIEI no.3:49-57 '59.
(MIRA 16:10)

66742

5(4) 5.4600

AUTHOR: Zykov, V. I.

SOV/20-129-2-39/66

TITLE: A New Type of Amperage Jumps on a Dropping Electrode in the Reduction of the BrO_3^- -Anion

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 2, pp 376 - 379 (USSR)

ABSTRACT: The jump-like increase of amperage caused by the autocatalytic course of the reaction, such as may be observed with a certain potential on the potential curves of the reduction of some oxygen-containing anions of the type XO_3^- , has repeatedly been described in publications (Refs 1-7), but has hitherto been observed only in the presence of tri- and quadrivalent cations (e.g. La, Ce). The author described the same effect in the presence of bivalent ions. He investigated the reduction of BrO_3^- by tetrabutyl ammonium (TBA), where Bu_4N^+ served as a background (Fig 1). With an addition of TBA in the order of magnitude of 10^{-4} mol, the first symptoms of an anomalous dependence of amperage on the potential occurred. The wave became steeper, and its beginning shifted toward a negative value. At a TBA concentration of more than $9 \cdot 10^{-4}$ mol, the amperage jump occurred.

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A New Type of Amperage Jumps on a Dropping Electrode 80V/20-129-2-39/66
in the Reduction of the BrO_3^- -Anion

At higher TBA concentrations the potentials of the jumps become increasingly negative, but the shifting decreases (Fig 2). Increased concentration of the bromate ion with the background concentration and the TBA remaining the same, the amperage of the limit current increases, but the position of the wave is not shifted with respect to the potential axis. If the bivalent cation is replaced by an alkali cation, no jumps occur. In figures 3 and 4 the same data are given for comparison for the reduction of BrO_3^- and JO_3^- with LaO_1 , as a background. The author draws the following conclusions from the experimental data obtained: 1) The amperage jumps in the bromate anion reduction by TBA with alkaline earth cations as a background are as to their origin, basically different from autocatalytical jumps. 2) The cause of the jump-like increase of amperage is a structural change of the electrical double layer due to desorption of the TBA cation, which occurs in jumps at a certain potential. The author described this effect as desorption jump. In the double layer he assumes a dynamic equilibrium between the cation M^{2+} adsorbed on the surface of the cathode and the BrO_3^- -anion subjected to reduction, so that ion pairs are produced. The

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A New Type of Amperage Jumps on a Dropping Electrode
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SOV/20-129-2-39/66

added TBA cations displace the M^{2+} cations from the double layer. As, however, the TBA cation has a radius that is considerably larger than that of the M^{2+} -cation, the concentration of the reacting particles in the double layer, and thus also the probability of the formation of an ion pair from BrO_3^- and $(\text{C}_4\text{H}_9)_4\text{N}^+$ becomes less. As soon as the potential of TBA^+ desorption is attained, the double layer attains its old structure abruptly. The shifting of the potential, at which the jump occurs, in a negative direction at a higher TBA^+ concentration is explained by a shifting of the desorption potential of this cation. In the presence of alkali ions as background, the reduction of BrO_3^- occurs within a potential range in which the TBA^+ is no longer adsorbed, and therefore there is no jump in this case. It is mentioned that the author thanks A. N. Frumkin for valuable advice. There are 4 figures and 11 references, 6 of which are Soviet.

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New Type of Amperage Jumps on a Dropping Electrode SOV/20-129-2-39/66
in the Reduction of the BrO_3^- -Anion

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut aviationsionnykh
materialov (All-Union Scientific Research Institute for Avia-
tion Material)

PRESENTED: May 29, 1959, by A. N. Frumkin, Academician

SUBMITTED: March 26, 1959

✓

Card 4/4

AUTHORS:

Zykov, V. I., Zhdanov, S. I.

76-32-4-10/43

TITLE:

The Reduction of the Bromate Anion at the Dropping Mercury Electrode (Vosstanovleniye bromat-aniona na kapel'nom rtutnom elektrode) II. The Influence of Temperature on the Reduction Kinetics of the Bromate Anion in Neutral and Alkaline Medium (II! Vliyanie temperatury na kinetiku vosstanovleniya bromat-aniona v neytral'noy i shchelochnoy srede)

PERIODICAL:

Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 4,
pp. 791-796 (USSR)

ABSTRACT:

The investigations are continuing a previous paper and the author mentions in the present work the results of the investigations mentioned in the title carried out with Li^+ , Rb^+ , Cs^+ , $(\text{CH}_3)_4\text{N}^+$, Ca^+ , Ba^{+2} at from 5° to 65°. Several investigations of the temperature influence on similar reactions have already been carried out, as there are, for instance, the works by Nejedly (reference 2),

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The Reduction of the Bromate Anion at the Dropping
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Reduction Kinetics of the Bromate Anion in Neutral and Alkaline Medium

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Kametskiy and Sutskiy (reference 3), Delahay and Mattax (reference 4), Kuta (reference 5) as well as by N. V. Nikolayeva and G. Furazhkova (reference 8). From the experimental data of this work can be seen that the method of operation corresponded to that of the previous work, and that some explanations of the calculation of results mentioned graphically and on tables are given. It was observed that in the case of a raise of temperature the limit current of the BrO_3^- reduction increases, with the temperature coefficient varying per degree from 0,25 to 1,34%, and the semiwave potential becoming more negative. The first is in accordance with the equation by Il'kovich, while the influence of temperature on the reduction velocity of the BrO_3^- ion decreases at the background of univalent cations, while it increases with bivalent ones. Finally the authors thank A. N. Frumkin, Member of the Academy. There are 4 figures, 1 table, and 13 references, 9 of which are Soviet.

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The Reduction of the Bromate Anion at the Dropping 76-32-4-10/43
Mercury Electrode. II. The Influence of Temperature on the
Reduction Kinetics of the Bromate Anion in Neutral and Alkaline Medium

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii
(Physico-chemical Institute, AS USSR)

SUBMITTED: June 28, 1956

AVAILABLE: Library of Congress

1. Bromate ions--Properties 2. Bromate ions--Temperature factors

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5(4)
AUTHOR:

Zykov, V. I.

05809

SOV/76-33-10-7/45

TITLE:

Reduction of the BrO_3^- Anion on a Mercury Dropping Electrode.
III. Effect of La^{3+} Additions on the Discharge Kinetics of
 BrO_3^- in the Presence of Cations of Smaller Charge

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 10, pp 2156-2163
(USSR)

ABSTRACT: Previous publications have already indicated the formation and the decisive part played by the associations of ions in certain reactions on electrodes; there is, however, no general agreement on this problem. Heyrovsky (Ref 3) assumes that these associations be formed in the solvent. Experiments made by Holleck (Refs 5, 10), on the part played by the associations in the migration of NO_3^- ions have shown that the nitrate ion arrives at the cathode by way of diffusion. G. M. Florianovich and A. N. Frumkin (Ref 11) made a completely different assumption, i.e. these associations may be formed in the double layer of the cathode. In order to solve this problem, the author investigated the effect mentioned in the title. Polarization curves were obtained at $25 \pm 0.1^\circ\text{C}$ by means of a previously described device and method (Ref 1). The author studied

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Reduction of the BrO_3^- Anion on a Mercury Dropping Electrode. III. Effect of La^{3+} Additions on the Discharge Kinetics of BrO_3^- in the Presence of Cations of Smaller Charge

the influence exerted by LaCl_3 additions on the polarization curve of BrO_3^- in 0.1, 1.0, 2.0, 4.0 n solutions, in saturated, neutral and acidified solutions of KCl , 0.1 and 1.0 n LiCl solutions, 1.0 n BaCl_2 and $(\text{C}_2\text{H}_5)_4\text{NBr}$ and in $(\text{C}_4\text{H}_9)_4\text{NBr}$ solutions of various concentrations. Results obtained from the polarograms (Figs 1-7) are interpreted by the concept of discontinuous density of the electric field along the electrode surface as well as on the assumption that those BrO_3^- anions participate in the discharge which enter the associations. A double role is ascribed to the La^{3+} cation adsorbed on the cathode surface: 1) It promotes the formation of ion associations in the double layer of the electrode (action through the ψ_1 -potential); 2) it activates the particles under discharge. Interaction of particles results in a division of the polarogram wave, produces wave I which corresponds to a discharge of associations of the type

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Reduction of the BrO_3^- Anion on a Mercury Dropping Electrode. III. Effect of La^{3+} Additions on the Discharge Kinetics of BrO_3^- in the Presence of Cations of Smaller Charge

$\left[\text{xLa}^{3+} \dots \text{yBrO}_3^- \right]^{(3x-y)^+}$, and accordingly, wave II
 $\left[\text{xM}^{z+} \dots \text{yBrO}_3^- \right]^{(zx-y)^+}$ (M^{z+} = background cation). The composition of the associations is assumed to depend on the pH-value in the boundary layer of the electrodes. At a certain pH-value of the reaction, the reduction of BrO_3^- becomes autocatalytic and is accelerated by OH^- ions (in the presence of La^{3+}). The inhibitory effect of the cations $(\text{C}_2\text{H}_5)_4\text{N}^+$ and $(\text{C}_4\text{H}_9)_4\text{N}^+$ on BrO_3^- discharge is attributed to the contribution of associations to the discharge and by the reduction of their concentration in the double layer as a result of the effect of surface-active organic cations. There are 7 figures and 23 references, 10 of which are Soviet.

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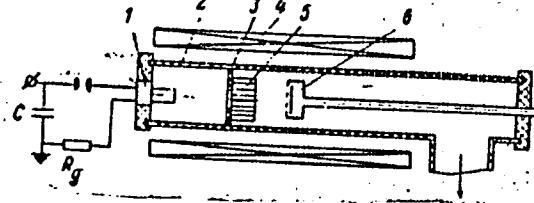
Reduction of the BrO_3^- Anion on a Mercury Dropping Electrode. III. Effect of
 La^{3+} Additions on the Discharge Kinetics of BrO_3^- in the Presence of Cations
of Smaller Charge

SUBMITTED: March 7, 1958

Card 4/4

ACC NR:	AP6036032	SOURCE CODE:	UR/0057/66/036/011/1990/1994
AUTHOR:	Zykov, V.M.; Fedyanin, O.I.		
ORG:	Physics Institute im. P.N. Lebedev, Moscow (Fizicheskiy institut im. P.N. Lebedeva)		
TITLE:	An electrical method for cutting off a plasma stream		
SOURCE:	Zhurnal tekhnicheskoy fiziki, v. 36, no. 11, 1966, 1990-1994		
TOPIC TAGS:	moving plasma, plasma control, electric field, magnetic field, valve		
ABSTRACT: The authors have employed the apparatus diagrammed in the figure to test the operation of an electrostatic plasma gate consisting of a number of 0.12 mm thick 20 mm long stainless steel plates mounted parallel on; a 2 mm spacing with alternate plates oppositely charged. The gate is intended for use in a plasma purification system. In the figure, 1 is a spark plasma source of the type described by W.H. Bostick (Phys. Rev., 106, 1957), which produced plasmas with densities up 10^{12} cm^{-3} ; 2 is a 12 cm diameter glass vacuum chamber; 3 is a diaphragm mounted 20 cm from the plasma source and having a 3 cm diameter opening; 4 is a solenoid producing a quasi-steady magnetic field of up to 3 kOe; 5 is the gate under test; and 6 is a 4 cm diameter shielded electric probe for measuring the plasma passing through the gate. When no voltage was applied to the gate its transparency increased with increasing			
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ACC NR: AP6036032



strength of the longitudinal magnetic field; in a 2 kOe field the transparency of the gate was 0.85, which is close to the geometric value. When a potential of 100 V was applied to the gate its transparency to a plasma with a maximum density of 10^{11} cm^{-3} was 0.04, and at a potential of 200 V its transparency to a 10^{12} cm^{-3} plasma was 0.01. The gate was also tested with 100 V square pulses, and it was found to be possible to cut off a selected portion of the plasma burst. It is suggested that the operation of the gate involves separation of the diffusion of plasma in crossed fields. The authors thank I.S.Shpigel for valuable discussions, and Yu.V.Khol'nov and P.V.Perov for assistance with the experiments. Orig. art. has: 2 formulas and 6 figures.

SUB CODE: 20 SUBM. DATE: 05Nov65 ORIG. REF: 007 OTH REF: 002

Card 2/2

ZYKOV, V.M., kand. tekhn. nauk

Dimensions across the pitch of mining areas and panels in over-all mechanization of stoping operations in flat inclines. Ugol' 38 no. 9:15-18 S '63. (MIRA 16:11)

ZYKOV, V.M.

Work practices in longwalls with powered supports. Ugol'
39 no.7:69-71 J1 '64. (MIRA 17:10)

1. Institut gornogo dela im. A.A. Skochinskogo.

ZYKOV, V.M.

Productiveness of stoping aggregates for lign stopes, Gor. i ekon.
vop. razrab. ugol'. i rud. mest. no.1:39-49 '62, (MIRA 16:7)
(Stoping (Mining)--Equipment and supplies)

IVANOV, N.I., kand.tekhn.nauk; SOCHINSKIY, V.P., inzh.; KAGANSKIY, M.Ye., inzh.; ZIKOV, V.M., inzh.

Efficient methods of developing new levels in the operative Donets Basin mines mining flat seams. Sbor.DonUGI no.21:3-35 '61. (MIRA 15:6)

(Donets Basin—Coal mines and mining)

IVANOV, N.I., kand.tekhn,nauk; ZIKOV, V.M., inzh.; KAGANSKIY, M.Ye., inzh.

Some cost indices for operative mines and mines under reorganization. Sbor.DonUGI no.21:89-99 '61. (MIRA 15:6)
(Donets Basin--Coal mines and mining--Costs)

ZYKOV, V.M., gornyy inzh.; DUKALOV, M.F., kand.tekhn.nauk

Effect of the longwall length and rate of advancing of the
face on the value of its output and on the technical and
economic indices. Ugol' 37 no.2:54-55 F '62. (MRA 15:2)
(Coal mines and mining)

IVANOV, N.I.; SHTEDING, A.E.; Prinimali uchastiye: ZYKOV, V.M., inzh.;
HEREZNITSKIY, I.I., inzh.; NORENKO, N.A., inzh.; SOCHINSKIY, V.P.,
otv. red.; NURMIUKHOMEDOVA, V.F., red. izd-va; PROZOROVSKAYA, V.L.,
tekhn. red.

[Reorganization of coal mines] Rekonstruktsiia ugol'nykh shakht.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Pt.1.
[Practices of foreign countries in the reorganization of coal
mines] Zarubezhnyi opyt rekonstruktsii shakht. 1961. 222 p.

(MIRA 15:1)

(Coal mines and mining)

ZYKOV, V.M., gornyy inzhener

Proposed plan for the reorganization of underground transportation.

Ugol' Ukr. 4 no. 11:20 N '60. (MIRA 13:12)

(Donets Basin--Mine haulage)

KURNEOV, A.M., kand. tekhn. nauk; ZYKOV, V.N., kand. tekhn. nauk; LIKAL'YEV, I.A.,
gornyy inzh.

Systems of mining coal seams by longwalls equipped with complexes
of machines with powered supports. Ugol' 40 no.5:5-69 My '65.
(MTRA 18:6)

1. Institut gornogo dela im. A.A.Skochnikova.

ZYKOV, V.M.; MIKHAYLOV, V.M.

Experience abroad of using complexes of equipment for mechanizing
mining operations. Ugoi' 40 no. 5175-79 My 165.

(MIR 18:6)

KURNOSOV, A.M., kand.tekhn.nauk; USTINOV, M.I., kand.tekhn.nauk; ZYKOV, V.M.,
kand.tekhn.nauk; LIKAL'TER, L.A., gornyy inzh.; ANISIMKIN, A.Ye.,
gornyy inzh.; USATOV, A.I., gornyy inzh.

Use of design methods in determining optimum parameters for coal
mines to be reorganized. Ugol' 40 no.9:52-58 S '65.

(MIRA 18:10)

1. Institut gornogo dela imeni A.A.Skochinskogo (for Kurnosov,
Ustinov, Zykov, Likal'ter). 2. Luganskproyekt (for Anisimkin,
Usatov).

S/056/62/042/001/018/048
B104/B102

AUTHORS: Sumbayev, O. I., Smirnov, A. I., Zykov, V. S.

TITLE: Mössbauer effect on tungsten isotopes

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
no. 1, 1962, 115-123

TEXT: In the present study of the Mössbauer effect, the intense lines near the resonance energy were examined with a focusing crystal diffraction γ -spectrometer of the Du Monde type with a resolution of several tenths of a percent. The experimental arrangement also permitted customary measurements by separating the resonance lines with a scintillation counter. The dependence of nonrecoil nuclear resonance absorption at the 100.09-kev level of W^{182} and at the 99.07-kev and 46.48-kev levels of W^{183} on the relative velocity between the source (Ta) and the absorber (W) was investigated. In contradistinction to the findings of de Mercy et al. (C.R. Paris, 250, 1031, 1960), the observed Mossbauer effect was in no case less than the theoretical value. The Debye temperatures, calculated

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Mössbauer effect on tungsten isotopes

S/056/62/042/001/018/048

B104/B102

from the magnitude of the effect, were found to be 283^{+28}_{-6} deg. for the tantalum source, and 320^{+70}_{-40} deg. for the tungsten absorber. The total level width of the 100.09-kev level fits data obtained by the Coulomb excitation technique and by delayed coincidences, but is not consistent with the results of a previous experiment on nuclear resonance absorption. D. M. Kaminker is thanked for interest, A. A. Netsetskiy and A. S. Ryl'nikov for assistance in setting up the experimental arrangement and in measurements, as well as the staff of the BBPM (VVRM) reactor at FTI AS USSR imeni A. F. Ioffe. K. P. Mitrofanov and V. S. Shpinel' (ZhETF, 40, 983, 1961) are mentioned. There are 6 figures, 1 table, and 13 references: 4 Soviet and 9 non-Soviet. The four most recent references to English-language publications read as follows: L. L. Lee, L. Meyer-Schutzmeister, J. P. Schiffer, Phys. Rev. Lett., 2, 223, 1959; A. W. Sunyar, Phys. Rev., 98, 653, 1955; F. K. McGowan, P. H. Stelson, Phys. Rev., 109, 901, 1958; E. Cotton, J. Phys. Rad., 21, 265, 1960.

ASSOCIATION: Leningradskiy fiziko-tehnicheskiy institut Akademii nauk SSSR (Leningrad Physicotechnical Institute of the Academy of Sciences USSR)

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Mössbauer effect on tungsten isotopes

S/056/62/042/001/018/048
B104/B102

SUBMITTED: August 24, 1961

Table. Experimental results.

Legend: (1) level; (2) total level width, 10^{-7} ev; (3) experiment; (4) theory; (5) other authors' data; (6) authors' own data; (7) without allowance for (1/2-3/2) interaction; (8) with allowance for interaction; Ref. 5: L. L. Lee et al., Phys. Rev. Lett., 3, 223, 1959; Ref. 6: A. W. Sunyar, Phys. Rev., 98, 653, 1955; Ref. 7: F. K. McGowan et al., Phys. Rev., 109, 901, 1958; Ref. 8: A. K. Kerman, Mat.-Fys. Medd. Dan. Vid. Selsk., 30, 15, 1956.

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3

L 11958-66

ACC NR. AF5026587

EWT(1)/EWT(m)/EWF(t)/EWP(b) LJP(a) J

SOURCE CODE:

UR/0056/65/049/004/1019/1021

AUTHORS: Zykov, V. S.Petrovich, Ye. V.Smirnov, Yu. P.ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences,SSSR (Fiziko-tehnicheskiy institut Akademii nauk SSSR)TITLE: Influence of stoichiometry on the Mossbauer effect in tindioxideSOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no.4, 1965, 1019-1021TOPIC TAGS: Mossbauer effect, tin compound, line broadening, absorptionline, stoichiometryABSTRACT: A hypothesis is advanced that one of the causes of the ob-served broadening of the Mossbauer absorption line in SnO_2 is violationof the exact stoichiometric composition in the samples prepared in theusual manner. To check on this hypothesis, the authors compared theresonance-absorption spectra for two SnO_2 samples of different stoichio-metric compositions. One of the absorbers was prepared from tin dioxideproduced by dissolving metallic tin in HNO_3 with subsequent evaporation

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1/2

L 11958-66

ACC NR: AP5026587

of the solution and roasting of the precipitate in air at 1200C for 30 hours. The second absorber was subjected to an additional firing in vacuum at 600C for 24 hours, with subsequent cooling for one hour. The measurements were made at room temperature using apparatus with an electromagnetic vibrator executing simple harmonic motion. The resonance-absorption spectrum was recorded with a multichannel analyzer. The results showed that the Mossbauer line of the sample fired in vacuum is broader than that of the standard sample, and exhibits in addition a fine structure. A possible cause of this broadening is the formation of SnO grains when the stoichiometry of the tin dioxide is disturbed. Authors thank D. M. Kaminker for interest in the work, O. I. Sumbayev for help and valuable remarks, and A. I. Yegorov for help in preparing the samples. Orig. art. has: 1 figure and 1 table.

SUB CODE: 20/ SUBM DATE: 27Mar65/ NR REF Sov: 009/ OTH REF: 003

lehr
card 212

ZYKOV, Ye.I.

Automatic machine for polishing roller paths of inner races of, spherical-bearings. Biul.tekh.ekon.inform.Gos.nauch.-issl.inst.nauch. i tekh.inform. 17-10-10747490 4.0 '64. (MIRA 18:4)

ZYKOV, Yu., kand. sel'khoz. nauk; NAZARENKO, L., red.; NAGIBIN, P.,
tekhn. red.

[Pulse crops serve animal husbandry] Zernobobovye kul'tury
sluzhat zhivotnovodstvu. Alma-Ata, Kazsel'khozgiz, 1962.
26 nos. in 1 v. 22 p. (MIRA 17:1)

ZYKOV, Yu. A., assistant

Some problems in the surgical treatment of cancer of the duodenal papilla. Trudy OMI no. 54:111-116 '64.

(MIRA 18:9)

1. Iz kafedry gospital'noy khirurgii (zav. dotsent N.S. Makokha) Omskogo meditsinskogo instituta.

GRIGOR'YAN, D.G.; NAZARENKO, N.A.; LYSENKO, V.B.; MIRKUR'YEVA, R.V.;
ZYKOV, Yu.V.; MAKOVEYEVA, G.M.

Dynamics of antibody formation and the fractional composition of blood serum glycoproteins in immunization with tissue antigens. Biul. eksp. biol. i med. 60 no.7:75-78 Jl '65. (MIRA 18:8)

1. Eksperimental'nyy otdel (zav.- prof. F.D. Vasilenko), biokhimicheskaya laboratoriya (zav.- dotsent V.A. Shalimov) TSentral'nogo institut kurortologii i fizioterapii (direktor - kand. med. nauk G.N. Pospelova), laboratoriya immunokhimii (zav.-prof. V.S. Gostev) Instituta eksperimental'noy biologii AMN SSSR (direktor - prof. I.N. Mayskiy) i biokhimicheskaya laboratoriya (zav.- prof. Ye.P. Stepanyan) Instituta serdechno-sosudistoy khirurgii (direktor - prof. S.A. Kolesnikov) AMN SSSR, Moskva.

5.3900

77351
SOV/79-30-1-12/78

AUTHORS: Shostakovskiy, M. F., Rabinovich, M. S., Preobrazhenskaya,
Ye. V., Zykova, O. N.

TITLE: Investigation of the Synthesis of Precursors and
Structural Parts of Antibiotics. I. α -Aminoadipic
Acid

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 67-71
(USSR)

ABSTRACT: The α -aminoadipic acid can be synthesized by the
following two methods: (1) by condensation of
 γ -bromobutyronitrile with N-acetylaminomalonic ester
followed by hydrolysis and decarboxylation; and
(2) by amination of diethyl ester of α -bromoadipic
acid with subsequent hydrolysis. The yield of
 α -aminoadipic acid prepared by the first and second
methods is 44% (based on starting γ -bromobutyronitrile)
and 82% (based on diethyl ester of α -bromoadipic acid),
respectively. The technical α -aminoadipic acid is
purified by dissolving in 1 N NaOH and treatment with

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Investigation of the Synthesis of
Precursors and Structural Parts of
Antibiotics. I. α -Aminoadipic Acid

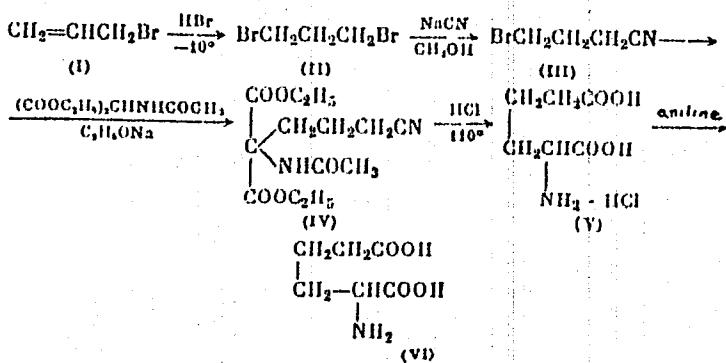
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activated charcoal (pH 8.0). Upon acidification (pH 3-3.5) of the colorless filtrate crystalline α -aminoadipic acid precipitates (yield 94%), mp 173-174° (decom). Heating of diethyl ester of α -bromo-adipic acid in absolute alcohol saturated with gaseous ammonia in the autoclave at 100-110° (pressure 7 atm) for 12 hr yields amide of α , α -piperidonecarboxylic acid, mp 168-169°. When α -aminoadipic acid is recrystallized from water, about 50% of it is converted into α , α -piperidonecarboxylic acid. Esterification of α -aminoadipic acid by heating with isopropyl alcohol in the presence of HCl yields isopropyl ester of α , α -piperidonecarboxylic acid, mp 65.6-66.5°. This was verified by parallel synthesis of this ester from piperidonecarboxylic acid. The α -aminoadipic acid was also synthesized in the following way:

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Investigation of the Synthesis of
 Precursors and Structural Parts of
 Antibiotics. I. α -Aminoadipic Acid

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The authors wish to thank A. S. Knokhlov and Ye. M. Kleyner for samples of α -aminoadipic acid, and F. M. Meller for performing elemental analysis. There are 10 references, 2 Soviet, 5 U.S., 3 German. The U.S. references are: Schwenk, E., Papa, D., J. Am. Chem. Soc., 70, 3626 (1948); Bun Hof, Demorsman, J. Org. Ch., 18, 649 (1953); Waalkes, T. P., Fones, W. S., White, J.,

Card 3/4

Investigation of the Synthesis of
Precursors and Structural Parts of
Antibiotics. I. α -Aminoadipic Acid

77351
SOV/79-30-1-12/78

J. Am. Chem. Soc., 72, 5760 (1950); Derick, C. G.,
Hess, R. W., J. Am. Chem. Soc., 40, 547 (1918); Brown,
G. B., Baker, B. R., Bernstein, S., Safir, S., J.
Org. Ch., 12, 162 (1947).

ASSOCIATION: All-Union Scientific Research Institute of Antibiotics
(Vsesoyuznyy nauchno-issledovatel'skiy institut
antibiotikov)

SUBMITTED: December 29, 1958

Card 4/4

ZYKOV, V. I., Candidate of Chem Sci (diss) -- "Investigation of the mechanism of electrochemical reduction of the BrO_3^- anion on a mercury drop electrode". Moscow, 1959. 20 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov), 200 copies (KL, No 21, 1959, 112)

ZYKOV, V.I.

32-2-37/60

AUTHORS: Zykov, V. I., Makarova, Ye. V.

TITLE: Construction of a Vibration Extinguisher With an Air Thermo-
stat (Ustanovka vibrogasitelya s vozduшnym termostatom)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 2, pp. 220 - 221
(USSR)

ABSTRACT: The device described here renders very good service in several polarographic investigations of electrochemical processes, in which the operation effect of the capillary, which is dependent upon vibrations, is of particular importance. Described schematically, a plexiglass enclosure is mounted on a massive iron plate with a weight of 50 - 60 kg, which is suspended by means of bolts on springs. The enclosure serves as air thermostat, it can be opened and contains in the center a base plate suspended on springs, on which the support for the polarograph is mounted. The support base plate has on its lower side a projection with a fan like extension, dividing into a viscous liquid. The plexiglass casement contains: a venti-

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Construction of a Vibration Extinguisher With an Air Thermostat 32-2-37/60

lator, a heating stove or lamp, respectively, a contact- and a control thermometer, and an electronic relay. The temperature can be kept constant with an accuracy of $\pm 0,1^{\circ}\text{C}$ from 25 - 80 $^{\circ}\text{C}$. Polarograms of BrO_3^- in $\text{In}(\text{CH}_3)_4\text{NBr}$, which were obtained by the application of the device described here with a dropping mercury electrode, are given. It is possible to operate with potentials up to 2.6 V with a capillary radius of 0,0438 mm. The apparatus described here may also be used for the investigation of temperature effects. There are 2 figures.

ASSOCIATION: Institute for Physical Chemistry AN USSR
(Institut fizicheskoy khimii Akademii nauk SSSR)

AVAILABLE: Library of Congress

1. Polarographic analysis-Equipment
2. Vibration isolators-Design

Card 2/2

ZYKOV, V.I.; MAKAROVA, Ye.V.

Arrangement of the vibration damper with an air thermostat. Zav.lab.
24 no.2:220-221 '58. (MIRA 11:3)

1. Institut fizicheskoy khimii nauk SSSR.
(Damping (Mechanics)) (Thermostat)

SUMBAYEV, O.I., SMIRNOV, A.I., ZYKOV, V.S.

Mössbauer effect on tungsten isotopes. Zhur.eksp.i teor.fiz. 42
no.1:115-123 Ja. '62. (MIRA 15:3)

1. Lenigradskiy fiziko-tehnicheskiy institut AN SSSR.
(Tungsten--Spectra)

15-1957-10-14013

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,
p. 98 (USSR)

AUTHORS: Zykov, Ye. A., Pryamonosov, P. S.

TITLE: Minerals of Gold and Tellurium and the Paragenetic Asso-
ciations of a Deposit in the Southern Altay (Mineraly
zolota, tellura i parageneticheskiye assotsiatsii odnogo
iz mestorozhdeniy Yuzhnogo Altaya)

PERIODICAL: Nauchn. raboty stud. Sverdl. gorn. in-ta, 1957, Nr 3,
pp 5-14

ABSTRACT: The gold quartz veins of this deposit are confined to
small granite stocks. The vein minerals are quartz,
ankerite, sericite, chlorite, albite, tourmaline, and
calcite. The ore minerals are pyrite, chalcopyrite,
tetrahedrite, galena, scheelite, native gold, nagyagite,
altaite, calaverite, tetradiomite, krennerite, native
tellurium, rickardite, tellurobismuthinite, azurite,
anglesite, cerussite, hydrotelluride, and native copper.
A list is given of the paragenetic associations in their

Card 1/2

1. ZYKOV, Ye. I.

2. USSR (600)

4. Grinding and Polishing

7. Automatic machine for feeding barrel-shaped rollers. Podshipnik no. 9, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

ZYKOV, Yu.D., kand. sel'skokhc. nauk

Alfalfa in southern Kazakhstan. Zemledelie 26 no. 5:62-64
(MIRA 17:6)
My '64.

COUNTRY	:	USSR
CATEGORY	:	Cultivated Plants - Forage Crops.
ABS. JOUR.	:	RZhBiol., No.14, 1958, No. 63434
AUTHOR	:	Dykov, Yu. D.
INST.	:	Scientific Research Institute of Feeds and Pastures.
TITLE	:	Summer and Postharvest Sowings of Alfalfa-Cereal Grass Blends Under the Conditions of Irrigated Agriculture in the Arid-Steppe Zone of Alma-Ata Oblast'.
ORIG. PUB.	:	Fr. N.-i. in-ta kormov i pastobshch, 1957, 1, 143-167
ABSTRACT	:	Study carried out at the Dzhambul' base of the Institute of Feeds and Pastures of Kazakh affiliate of VASKhNIL in 1952-1954, showed that full value sprouting of grasses and negligible thinning of them can be secured under the conditions of irrigation in the arid-steppe zone of Alma-Ata oblast', only by sowing without cover. The summer period of sowing grasses on vetch-oats (1-10 of July) or barley (20-30 of July) disked stubble is the best. The aggregate yield of hay from the intercrop of alfalfa-orchard grass on disked barley stubble for three years, comprised 389.5

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COUNTRY : USSR M
CATEGORY : Cultivated Crops - Forage Crops.
APL. JOUR. : RZKhPcl., No.14, 1958, No.65434
AUTHOR :
INST. :
TITLE :
ORIG. PUB. :
ABSTRACT : c/ha, on the plowed-over barley stubble - 317, from spring sowing under the cover of spring wheat - 220.3, from spring sowing without cover - 293.2, on bare fallow (summer sowing) 282.7 c/ha. Application of N60P60K30 hardly increased the hay yield of the grass blend; application at the rate of 150 c/ha of granular P₂O₅ with friable manure on barley stubble, increased the hay yield by a total of 62.6 c/ha for the second and third years. The grass blend of alfalfa (50%) with tall rye grass (50%) gave the highest yield of hay (total for 3 years - 385.3 c/ha), grass blend of alfalfa and orchard grass - 361.5 c/ha, and grass blend of
Card: 2/4

COUNTRY	:	USSR
CATEGORY	:	Cultivated Plants - Forage Crops
ABS. JOUR.	:	RZhBiol., №.14, 1953, №. 63434
AUTHOR	:	
INST.	:	
TITLE	:	
ORIG. PUB.	:	
ABSTRACT	:	alfalfa and meadow fescue - 337.2 c/ha. Grass blend of alfalfa and miscellaneous orchard grass is recommended. The sowing rate of 6 kg/ha of alfalfa and 6 kg/ha of miscellaneous grass produced the best results. The highest yields of seeds were secured from summer sowings of alfalfa in mixture with dew grass (50:50) with the sowing rate of the grass blend seeds of 12 kg/ha and with the same periods of sowing as for hay. Application of fertilizers considerably raised the crop of alfalfa seeds. Artificial complemental pollination of alfalfa

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79.

ZYKOV, Yu.D., kand.sel'skokhozyaystvennykh nauk

Effect of environmental conditions on the development of Semirechye
alfalfa. Agrobiologiya no. 3:397-401 My-Je '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut kormov i pastbishch, g.
Alma-Ata.
(Alfalfa)

ZYKOV, Yu.D., kand. sel'skokhoz. nauk

Development of new vegetative shoots on the alfalfa seed plant and
measures for increasing seed productivity. Agrobiologia no.4:565-
570 Jl-Ag '63. (MIRA 16:9)

1. Nauchno-issledovatel'skiy institut zemledeliya Alma-Atinskaya
oblast'.
(Alma-Ata Province—Alfalfa)
(Alma-Ata Province—Seed production)

ZYKOV, Yu. D.

"Summer and Secondary Sowing of Lucerne-Grain Grass Mixtures Under Irrigated Farming Conditions in the Dry Steppe Zone of Alma-Atinskaya blast."

Cand Agr Sci, Kazakh Agricultural Inst, 30 Dec 54. (KP, 15 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR
Higher Educational Institutions (12)

SO: Sum. No. 556, 24 Jun 55

ZYKOV, Yu.D., kandidat sel'skokhozyaystvennykh nauk.

Postharvest seeding of alfalfa. Zemledelie 4 no.6:98-101 Je '56.
(MLRA 9:8)

(Kazakhstan--Alfalfa)

ZYKOV, Yu.S.; TARNOVSKIY, I.Ya.; POZDEYEV, A.A.

Investigating by the variation method the widening of the metal during hot rolling in plain grooves. Izv. vys. ucheb. zav.; chern. met. 5 no.10:77-87 '62. (MIRA 15:11)

1. Ural'skiy politekhnicheskiy institut.
(Rolling (Metalwork))

POZDEYEV, A.A.; TARNOVSKIY, I.Ya.; ZYKOV, Yu.S.

Principles of the theory of hot plastic deformation of metals
during rolling. Izv. vys. ucheb. zav.; chern. met. 4 no.10:
50-58 '61. (MIRA 14:11)

1. Ural'skiy politekhnicheskiy institut.
(Rolling (Metalwork)) (Deformations (Mechanics))

ACCESSION NR: AP4029706

S/0136/64/000/004/0061/0065

AUTHORS: Stukach, A.G.; Lyashkov, V.B.; Lekarenko, Ye.M. (Deceased);
Pokrovskaya, G.N.; Zykov, Yu. S.; Chernykh, K.P.

TITLE: Deformation resistance During Impact Testing

SOURCE: Tsvetnye metally*, no. 4, 1964, 61-65

TOPIC TAGS: deformation resistance, impact test, static test, friction press hot rolling, alloy, copper, brass, zinc, bronze

ABSTRACT: The authors investigated the deformation resistance of "M-1" copper, "TsO" zinc, "N1" nickel, "L62" brass, "BrKD1", "BrOTs4", "BrKMTs3-1", "BrB2" and "NMZhMts28-2,5-1,5" bronze and "NKh9" chrome specimens. Impact tests approximated the service conditions during hot rolling. 25 mm long cylindrical specimens with a 20 mm diameter were reduced by 50% at a rate of deformation of 10 m/sec. A 60-ton friction press was used in combination with an electric furnace equipped with a Silite resistor. A study of the hardening diagrams showed that the hardening curves ascend sharply at low temperatures for most of the specimens submitted to increased deformation.

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ACCESSION NR: AP4029706

This shape of the curves is characteristic of high-melting and complex alloys. Low-melting resistant alloys show a peak which falls off as the degree of deformation is increased and deformation resistance declines (zinc, "BrBZ bronze alloy). For "L62" brass and copper the work hardening is eliminated above 700°C owing to the high rate of recrystallization. These findings stand in good agreement with the results obtained by other authors. Bronze alloy "Br0Ts4-3" and "BrKd1" specimens were reduced at a rate of 0.045 m/sec in a series of static tests. This tremendous increase in the rate of deformation resulted in an increased specific pressure and, consequently, the deformation resistance of "Br0Ts4-3" specimens was tripled. The same dependence was observed in "BrKd1" specimens. The results of static tests showed their unsuitability for the calculation of the industrial processes which occur at high rates of deformation. Changes in the rate of deformation by about 1.5 to 2 times do not affect the deformation resistance. Therefore, the specific pressures obtained at a 10 m/sec rate are applicable to similar rates. The orig. art. has: 3 figures.

Card 2/8

STUKACH, A. G.; LEKARENKO, Ye. M. [deceased]; ZYKOV, Yu. S.;
POKROVSKAYA, G. N.; BOGOMOLOV, Yu. I.; CHERWYKH, K. P.

Increase in width and the coefficient friction during
the shape rolling of nonferrous metals and alloys.
TSvet. met. 36 no. 11:65-69 N '63. (MIRA 17:1)

TARNOVSKIY, I.Ya.; POZDEYEV, A.A.; ZYKOV, Yu.S.

Variational method of investigating the widening of plastic toughness metal during the hot rolling process. Izv. vys. ucheb. zav.; chern. met. 4 no.12:61-70 '61. (MIRA 15:1)

1. Ural'skiy politekhnicheskiy institut.
(Rolling (Metalwork)) (Deformations (Mechanics))

S/148/61/000/010/002/003
E193/E435

AUTHORS: Pozdeyev, A.A., Tarnovskiy, I.Ya., Zykov, Yu.S.

TITLE: Foundations of the theory of visco-plastic
deformation of metal during rolling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya
metallurgiya, no.10, 1961, 50-58

TEXT: Experimental evidence indicates that a hot-worked metal
possesses both plastic and viscous properties and should therefore
be considered as a complex visco-plastic medium. In contrast to
the theory of small elastoplastic deformations in which the
equations of state for a deformed metal establish the relationship
between the stress and strain components, the corresponding
equations for the theory of visco-plastic deformation describe the
relationship between stress- and strain (deformation)-rate
components. One advantage of using the latter theory as a tool
for studying the mechanism of hot deformation is that it is
concerned with increments of stress and strain rates. As a result
the limiting condition of small degrees of deformation no longer
applies and the theory can be applied to studying the variation of
the stress-strain state at any moment of the deformation process.

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In the present paper, this theory is applied to the analysis of the mechanism of flat hot rolling. A slab of rectangular cross-section is considered whose dimensions are H_0 (thickness), L_0 (length) and B_0 (width). Its thickness is reduced during rolling by ΔH and its final dimensions are H_1 , L_1 and B_1 , the half-thickness and half-width being denoted by h and b with appropriate indices (0 or 1). The relationship between stress and strain rates is described by a set of equations for a visco-plastic medium (Ref.2: L.M.Kachanov. Mechanics of Plastic Media. Gostekhizdat, 1948)

$$\left. \begin{array}{l} \sigma_x - \sigma = 2\tau_s \frac{\xi_x}{H} + 2\mu' \xi_x; \quad \tau_{xy} = \tau_s \frac{\eta_{xy}}{H} + \mu' \eta_{xy}; \\ \sigma_y - \sigma = 2\tau_s \frac{\xi_y}{H} + 2\mu' \xi_y; \quad \tau_{yz} = \tau_s \frac{\eta_{yz}}{H} + \mu' \eta_{yz}; \\ \sigma_z - \sigma = 2\tau_s \frac{\xi_z}{H} + 2\mu' \xi_z; \quad \tau_{xz} = \tau_s \frac{\eta_{xz}}{H} + \mu' \eta_{xz}; \end{array} \right\} \quad (1)$$

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in which μ' (tensor coefficient) represents the coefficient of proportionality between the components of stress and the rate of deformation. Jordan's principle (Ref.3: L.S.Leybenzon. Course of Theory of Elasticity, Gostekhizdat, 1947) applied to an incompressible metal is expressed by

$$\iiint_V (\sigma_x \delta v_x + \sigma_y \delta v_y + \dots + \tau_{xz} \delta \eta_{xz}) dV = \iint_S (X_n \delta v_x + Y_n \delta v_y + Z_n \delta v_z) dS, \quad (4)$$

where X_n, Y_n, Z_n - projections of external forces applied to the body under deformation, on the axis of the coordinates; $\delta v_x, \delta v_y, \delta v_z$ - variations of velocity components of the displacements on the points of the body on which external forces are acting. The left hand side of Eq.(4) represents the variation of the work of internal forces, while the right hand side represents the variations of the work of external forces.

Utilizing Eq.(1), applying calculus of variations and introducing a

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new system of coordinates to the right hand side of Jordan's equation it will become

$$\delta \left[\iiint_V \left(\tau_s H + \frac{\mu'}{2} H^2 \right) dV + \psi \tau_s \iint_S \sqrt{v_y^2 + \left(v_x - \frac{v_x}{\cos \varphi_x} \right)^2} dS \right] = 0. \quad (16)$$

where: H - the intensity of the velocity of deformation due to shear; v_B - roller velocity; φ_x - the angle characterizing the point considered ($0 < \varphi_x < \alpha$); α - contact angle; τ_s - yield point under shear; v_x, v_y, v_z - velocity components ($v_z = v_x \tan \varphi_x$). Jordan's equation presented in this form is applicable to the analysis of the process of rolling on plain rollers. If the work of shear lost on overcoming resistances τ_s is also included, it becomes:

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$$\begin{aligned} & \iota \left[\iiint_V \left(\tau_s H + \frac{\mu'}{2} H^2 \right) dV + \sum_t \iint_{S_t} \tau_s |v_t| dS + \right. \\ & \left. + \psi_s \iint_S \sqrt{v_y^2 + \left(v_s - \frac{v_x}{\cos \varphi_x} \right)^2} dS \right] = 0, \end{aligned} \quad (17)$$

in which summation is extended over the surfaces of the discontinuities of the velocities and v_t represents the difference between the velocities on the surface of discontinuity. Eq. (16) or (17) should be combined with an equation expressing the law of energy conservation. The work done on direct rolling is:

$$N_{np} = M_{np} \omega = 2R \omega \left[\iint_{S_t} \psi \tau_s dS - \iint_{S_s} \psi \tau_s dS \right], \quad (18)$$

where M_{np} - roll torque (for two rollers); ω - angular velocity; R - roller radius. The work done on overcoming friction forces and internal resistances is

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$$N_A = \iiint_V (\tau_s H + \mu' H^2) dV + \psi \tau_s \iint_S \sqrt{v_y^2 + \left(v_x - \frac{v_x}{\cos \varphi_x}\right)^2} dS. \quad (21)$$

Taking into account the work lost on the surfaces of discontinuities and the condition $N_{pp} = N_D$ leads to

$$N = v_x \left[\iint_{a0}^{b_x} \psi \tau_s dS - \iint_{10}^{0 b_x} \psi \tau_s dS \right] - \iiint_V (\tau_s H + \mu' H^2) dV - \psi \tau_s \iint_S \sqrt{v_y^2 + \left(v_x - \frac{v_x}{\cos \varphi_x}\right)^2} dS - \sum_{i \in S_i} \iint_{S_i} \tau_s [v_i] dS = 0. \quad (26)$$

where γ - critical angle. Eq.(26) and (17) taken together define the problem for the calculus of variations. They contain three unknown quantities v_x, v_y, v_z and their derivatives which have to be determined in such a manner that, on one hand, the

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integral is to assume its maximum value and, on the other, the Eq.(26) be satisfied. Moreover, the functions v_x, v_y, v_z should satisfy incompressibility condition

$$\frac{\partial v_x}{\partial x} + \frac{\partial v_y}{\partial y} + \frac{\partial v_z}{\partial z} = 0. \quad (29)$$

The solution can be obtained with the use of the calculus of variations (Ref.10: S.G.Mikhlin. Direct methods in mathematical physics. Gostekhteorizdat, 1950; Ref.11: L.V.Kantorovich, V.I.Krylov. Methods of approximation of higher analysis. Gostekhteorizdat, 1949). Thus, the velocity of the metal at any point of the volume of deformation region can be determined, whence all rolling parameters can be calculated. The power expended on deformation N_d can be found from Eq.(21). If N_d is known, the rolling torque N_{tp} can be determined from Eq.(18), and the roll force can be calculated for a given roll radius. The velocities at the entry and exit points of the deformation region (v_0 and v_1) are calculated from the known value of v_x . Then, from the ratio of the initial-to-final cross-section area of Card 7/8

S/148/61/000/010/002/003
E193/E435

Foundations of the theory of ...

this slab or from the values of v_1 and v_2 , the elongation λ can be calculated from

$$\frac{F_o}{F_1} = \frac{v_1}{v_o} = \lambda$$

The lateral spread can be then calculated for a given draft, from the condition of constant volume of the deformed metal. The velocities v_x, v_y and v_z can be used also to construct trajectories of displacement of metal particles in the deformed region relative to the rolls, as has been described earlier (Ref.12: A.A.Pozdeyev, V.I.Tarnovskiy. Izv. VUZ. Chernaya metallurgiya, no.6, 1959). There are 12 references: 11 Soviet-bloc and 1 Russian translation of non-Soviet-bloc publication.

ASSOCIATION: Ural'skiy politekhnicheskiy institut
(Ural Politechnical Institute)

SUBMITTED: March 9, 1960

Card 8/8

GOSTEV, V.S.; SAAKOV, A.K.; AZLETSKAYA, A.Ye.; PERELAZNYY, A.A.; NAZARENKO, N.A.; MAZINA, N.M.; KULAGIN, A.N.; ZYKOV, Yu.V.; NIKITENKO, A.A.; SKACHKOV, N.I.

Comparative immunochemical study of antisera to tissue homogenates and the mixtures of their nonprotein fractions. Biul. eksp. biol. i med. 57 no.4:94-97 Ap '64. (MIRA 18:3)

1. Laboratoriya immunokhimii (zav. - prof. V.S. Gostev) Instituta eksperimental'noy biologii (dir. - prof. I.N. Mayskiy) AMN SSSR, Moskva. Submitted May 17, 1963.

GOSTEV, V.S. (Moskva, D-284, Begovaya u., 11, kv. 37); AZLETSKAYA, A.Ye.;
SAAKOV, A.K.; GRIGOR'YAN, D.G.; CHAMOVA, K.G.; ZYKOV, Yu.V.;
PERELAZNYY, A.A.; MAZINA, N.M.; KULAGIN, N.A.; MAKOVEYEVA, G.M.

Study of the antigenic properties of human tumors fractions
deprived of soluble proteins. Vop. onk. 8 no.9:18-26 '62.
(MIRA 17:6)

1. Iz laboratorii immunokhimii Instituta eksperimental'noy
biologii AMN SSSR (dir.- prof. I.N. Mayskiy).

GRIGOR'YAN, D.G.; ZYKOV, Yu.V.; MAKOVEYEVA, G.M.; ANDRIANOV, S.V.

Effect of lyophilization on the polymerism and immunological properties of desoxyribonucleoproteins. Biul. ekspr. biol. i med. 52 no.11:51-54 N '61. (MIRA 15:3)

1. Iz laboratorii immunokhimii (zav. - prof. V.S. Gostev) Instituta eksperimental'noy biologii (dir. - prof. I.N. Mayskiy) AMN SSSR, Moskva. Predstavlena deystvitol'nym chlenom AMN SSSR, N.N. Zhukovym-Verezhnikovym.

(NUCLEOPROTEINS)
(FREEZE-DRYING)

YEFREMOV, M.I.; ZYKOV, Yu.V.

Switching-over of automatic block systems in the Moscow-Ryazan
electrified district. Avtom., telem. i sviaz' 4 no.2:25-28 F
'60. (MIRA 13:6)

1. Nachal'nik otdela spetsializatsii, tsentralizatsii, blokirovki
i svyazi Moskovsko-Ryazanskogo otdeleniya Moskovskoy dorogi (for Yefremov).
2. Starshiy inzhener otdela spetsializatsii, tsentralizatsii
blokirovki i svyazi Moskovsko-Ryazanskogo otdeleniya Moskovskoy dorogi
(for Zykov).

(Electric railroads--Signaling)

ZYKOVA, A.S., nauchnyy sotrudnik

Lead air pollution and its effect on the health of the
population [with summary in English] Gig. i san. 22 no.2:12-17 F '57
(MLRA 10:4)

1. Iz Moskovskogo oblastnogo sanitarno-gigiyenicheskogo instituta.
(AIR POLLUTION

by lead discharges from indust. plants, eff. on
health)

(LEAD POISONING
from air polluted by lead discharges of indust. plants)

BOLOTAROV, V.I.; PEKSHEV, Yu.A.; LENSKIY, B.V.; AVSHNEV, Yu.M.;
KISVYANTSEV, L.A.; SHVETSOV, N.I.; TELEGIN, Ya.I.; ZYKOV, A.A.;
SENIN, V.P.; NETRUSOV, A.A.; GAVRILOV, V.V.; NIKOLAYENKO, Zh.I.;
VOLKOV, N.V.; KALASHNIKOV, A.A.; PLAKSIN, S.V.; POPOV, N.N.;
KARSHINOV, L.N.; YAKIMOV, T.A.; SHALASHOV, V.P.; KOSONOGOV, L.A.;
PUSENKO, N.N.; SLADKOVSKIY, M.I., red.; IVANOV, N.I., red.;
LEPNIKOVA, Ye., red.; MOSKVINA, R., tekhn.red.

[Economic development in the people's democracies; review for
1958] Razvitiye ekonomiki strel narodnoi demokrati; obzor za
1958 g. Pod red. M.I. Sladkovskogo i dr. Moskva. Izd-vo sotsial'-
no-ekon.lit-ry, 1959. 358 p. (MIRA 13:?)

1. Moscow. Nauchno-issledovatel'skiy kon'yunkturnyy institut.
(Communist countries--Economic conditions)

PEKSHEV, Yu.A.; LENSKIY, B.V.; AVSENOV, Yu.M.; MIL'ONOV, V.S.; KISVILANTSEV, L.A.; TELEGIN, Ya.I.; POTAPOV, V.I.; NETRUSOV, A.A.; ZYKOV, A.A.; KUDIN, B.M.; MAKSIMOVA, A.P.; NIKOLAYENKO, Zh.I.; VOLKOV, N.V.; SHVETSOV, N.I.; PLAKSIN, S.V.; POPOV, N.N.; KARSHINOV, L.N.; YAKIMOVA, T.A.; SHALASHOV, V.P.; VISYANIN, Yu.L.; KRASNOV, L.V.; PUSENKOV, N.N.; IVANOV, N.I., red.; ZOLOTAREV, V.I., red.; SLADKOVSKIY, M.I., red.; LEFPNIKOVA, Ye., red.; KOROLEVA, A., mladshiy red.; NOGINA, N., tekhn. red.

[Economic development of the people's democracies; survey for 1959]
Razvitiye ekonomiki stran narodnoi demokratii; obzor za 1959 god. Pod red. N.I. Ivanova i dr. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1960.
(MIRA 14:6)
305 p.

1. Moscow. Nauchno-issledovatel'skiy kon'yunkturnyy institut.
(Europe, Eastern—Economic conditions)

ZYKOVA, A. (Kirov); BERLIZOVA, L. (Kirov)

Without quality inspectors. Mest.prom.i khud.promys. 2 no.8:6
Ag '61. (MIRA 14:9)

1. Predsedatel' fabrichnogo komiteta Kirovskoy shveynoy fabriki
(for Zykova). 2. Nachal'nik-proizvodstvenno-tekhnicheskogo
otdela fabriki (for Berlizova).
(Kirov--Clothing industry--Quality control)

ZYKOVA, A.S.; FEDOROVSEIY, P.Ye.

Effectiveness of purification installations at carbon-black plants and the zonal distribution of atmospheric pollution by soot. (In: Mysia (1923- U.S.S.R.) Vsesoyuznaya gosudarstvennaya sanitarnaya inspaksiya. Ochistka promyshlennyykh vybrosov v atmosferu. 1953. p.8-28) (MLRA 7:1)

1. Moskovskiy oblastnoy sanitarno-gigiyenicheskiy institut.
(Air--Purification)

ZYKOVA, A. S. Cand Med Sci -- (diss) "Pollution of the atmosphere
by industrial lead-containing ^{discharges} ^{effect}, containing lead, and its influence upon
the health of the population". Mos, 1957. 8 pp 20 cm. (Acad Med Sci USSR)
140 copies. (KL, 9-57, 102)

-36-

ZYKOVA, A. S.

"Contamination of the Atmosphere by Lead and Its Effect on the Health of the Population," by A. S. Zykova scientific associate, Moscow Oblast Sanitary-Hygiene Institute, Gigiyena i Sanitariya, Vol 22, No 2, Feb 57, pp 12-17

Investigations were conducted of air samples collected in the vicinity of a battery-cell plant and a tin smelter, where the atmosphere was contaminated by waste discharges from the plants. The investigations established that lead concentration in the area of the plants was considerably in excess of the limits of the allowable concentration of 0.0007 milligram per cubic meter of air; it was cumulative in nature; it penetrated into buildings and dwellings together with dust; persons living in an atmosphere contaminated by lead for prolonged periods suffered from functional disturbances of the nervous system and gastrointestinal affections; lead was accumulated in the tissues of the organism. (U)

ZYKOVA, A.S., SCHASTNYY, V.A., YEFREMOVA, G.P.

Determination of natural radioactive aerosols in the atmosphere.

Gig. i san. 23 no. 10:62-64 O '58 (MIRA 11:11)

(AIR,

natural radioactive aerosols, determ. (Rus))

(RADIOACTIVITY,

natural radioactive aerosols in air, determ. (Rus))

ZyKova, A.S.
P.3

PHASE I BOOK EXPLOITATION

SOV/3589

Sbornik radiokhimicheskikh i dozimetricheskikh metodik (Collection of Radio-Chemical and Dosimetric Methods) Moscow, Medgiz, 1959. 459 p. Errata slip inserted. 9,000 copies printed.

Eds. (Title page): N.G. Gusev, U.Ya. Margulis, A.N. Maray, N.Yu. Tarasenko, Yu.M. Shtukkenberg; Ed. (Inside book): V.I. Labaznov; Tech. Ed.: A.I. Zakharova.

PURPOSE: This collection of articles is intended for physicists, sanitation and public health doctors, chemists and other specialists working in radioactive dosimetry.

COVERAGE: This work discusses the following subjects: (1) principles of organizing sanitation and dosimetric control in institutions where work is carried on with radioactive substances; (2) radio-chemical and chemical methods for determining certain radioactive substances in samples of air, water, soil and foodstuffs; (3) physical methods of measuring contamination of the air by radioactive gases and aerosols, and methods for determining the level of contamination of working surfaces, clothes and leather coverings; (4) methods

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Collection of Radio-Chemical and Dosimetric Methods SOV/3589

of measuring external streams of x- and gamma-radiation, and methods of individual dosimetric monitoring; (5) Absolute and relative methods of measuring the activity of solid and liquid radioactive sources. There are four appendixes dealing with methods of calculating the total dosage from sources of ionizing radiation, units of activity, and doses from natural (background) radioactivity in the calcium of foodstuffs. Sanitary regulations observed during transportation, storage, and handling of radioactive substances are discussed, as well as the permissible level of ionizing radiation. The editors thank Yu.V. Sivintsev and D.P. Shirshov. References appear at the end of each chapter.

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2. Sanitation inspection of open reservoirs (A.N. Marey)	16

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Collection of Radio-Chemical and Dosimetric Methods	SOV/3589
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Card 3/11

ZYKOVA, A.T.

Clinical aspects of angioreticulosarcoma of the cerebrum. Zhur. nevr. i psikh. 61 no.4:509-512 '61. (MIRA 14:7)

1. Klinika nervnykh bolezney i neyrokhirurgii (zav. kafedroy - prof. D.G.Shefer) Sverdlovskogo meditsinskogo instituta.
(BRAIN-TUMORS)

ZYKOVA, A. T., aspirant (Sverdlovsk)

Clinical characteristics of angioreticuloma of the cerebrum. Vop. neirokhir. no.6:28-30 '61. (MIRA 14:12)

1. Klinika nervnykh bolezney i neyrokhirurgii i kafedry nervnykh bolezney Sverdlovskogo meditsinskogo instituta.

(BRAIN-TUMORS) (ANGIOMA)

SHEVER, D.G., professor; OVECHKIN, V.R.; ZYKOVA, A.T.

Tropacin therapy of diseases of the central nervous system with extrapyramidal disorders. Sov. med. 18 no.11:24-25 N '54.

(MIRA 7:12)

1. Iz kliniki nervnykh bolezney Sverdlovskogo med. instituta i Instituta fizicheskikh metodov lecheniya (rukoved.-prof. D.G.Shafer)

(CENTRAL NERVOUS SYSTEM, diseases

extrapyramidal discord., ther., diphenylacetic acid
3-tropyl ester)

(ACETIC ACID, derivatives

diphenylacetic acid 3-tropyl ester, ther. of dis. of CNS)

Zyko A, G.I.

AUTHORS: Kobozev, N.I., Lebedev, V.P., Strakhov, B.V., Zyko A, G.I. 76-11-25/35

TITLE: The Physical Chemistry of Concentrated Ozone (Fiziko-khimiya kontsentrirovannogo ozona) III. The Explosive Oxidation of Nitrogen in Mixtures Containing Concentrated Ozone (III. Vzryvnoye okisleniye azota v smesyah s kontsentrirovannym ozonom)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 11, pp. 2547-2550 (USSR)

ABSTRACT: An oxidation of nitrogen under explosion in mixtures with concentrated ozone within the pressure range of from 25 to 100 mm torr was carried out. It is shown that within this range a linear increase of the nitrogen oxide leakage was observed in the case of increased pressure. The nitrogen oxide leakage curves in dependence on the composition of the initial mixture pass through a maximum at about 75% O₃. In the case of the here employed composition and the highest experimental pressure exercise (150 mm) the nitrogen oxide leakage amounted to about 2%. Comparatively small additions of oxygen considerably reduce this leakage. There are 4 figures and 3 Slavic references.

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The Physical Chemistry of Concentrated Ozone. III. The Explosive Oxidation of
Nitrogen in Mixtures Containing Concentrated Ozone 76-11-25/35

ASSOCIATION: Moscow State University imeni M.V.Lomonosov (Moskovskiy
gosudarstvennyy universitet im. M.V.Lomonosova)

SUBMITTED: September 18, 1956

AVAILABLE: Library of Congress

Card 2/2

FINIKOV, V.G.; ZYKOVA, G.N. (Moscow)

Isotopic exchange of oxygen in the systems
 $WO_3 - O_2$ and $Na_2W_4O_13 - O_2$. Zhur. fiz. khim. 38 no. 3:542-546
Mr '64. (MIRA 17:7)

1. Institut fizicheskoy khimii AN SSSR.

SPITSYN, Vikt.I., akademik; FINIKOV, V.G.; ZYKOVA, G.N.

Isotope exchange between O_2^{18} and molten $Na_2 WO_4^{16}$. Dokl. AN
SSSR 141 no.3:668-669 N '61. (MIRA 14:11)

1. Institut fizicheskoy khimii AN SSSR.
(Oxygen--Isotopes) (Sodium tungstate)

ACC NR: AP6032040

SOURCE CODE: UR/0411/66/002/005/0600/0604

AUTHOR: Zykova, K. I.

ORG: Laboratory of Hematology and Histology, Scientific Research Institute im. Sklifosovskiy (Nauchno-issledovatel'skiy institut, Laboratoriya perelivaniya krovi i konservirovaniya tkanej)

TITLE: A quantitative method for determining fibrinolytic activity

SOURCE: Prikladnaya biokhimiya i mikrobiologiya, v. 2, no. 5, 1966, 600-604

TOPIC TAGS: ~~medicine~~, medical research, thromboembolytic disease, circulatory system, cardiovascular system, clinical method, fibrinolytic activity

ABSTRACT: Fibrinolysis is an enzyme widely distributed in nature not only in animals but in products of bacterial synthesis and is widely used in the treatment of thromboembolytic diseases of the cardiovascular system. Blood from cadavers possesses equal or greater fibrinolytic activity as whole blood from healthy bodies. The method described can determine quantitatively the fibrinolytic activity of whole and citrated cadaverous blood and can be used for classifying blood samples according to their fibrinolytic activity. The percentage of a known amount of fibrin which is

UDC: 542.98+615.388

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